REMARKS

This application has been carefully reviewed in light of the Office Action dated August 11, 2006. Claims 1-3 and 6 remain in this application. Claim 1 is the independent Claim. Claim 1 has been amended. Claims 4-5 have been canceled without prejudice. It is believed that no new matter is involved in the amendments or arguments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

Non Art-Based Rejections

Claims 1-3, and 6 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness in independent Claim 1. In response, independent Claim 1 has been amended accordingly. Reconsideration and withdrawal of the above § 112 rejection are thus respectfully requested.

Rejection Based on Co-Pending 10/676,797

Claims 1-3, and 6 were provisionally rejected under 35 U.S.C. § 103(a) over the co-pending 10/676,797 application. In response, Applicant is submitting concurrently the common ownership statement stating that both the invention of present application and that of co-pending 10/676,797 application were owned by or subject to assignment to the common assignee at the time of invention.

Under § 103(c), co-pending 10/676,797 application is precluded from being § 102(e), (f), or (g) prior art for § 103(a) rejection. Accordingly, reconsideration and withdrawal of the above rejection are respectfully requested.

Art-Based Rejections

Claims 1-3, and 6 were rejected under 35 U.S.C. § 103(a) over U.S. Patent Application Publication No. 2002/0007875 A1 (Yamamoto). Claims 1-3, and 6 were also rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,595,608 (Takebuchi). Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and the arguments below.

The Yamamoto Reference

Yamamoto is directed to R-Fe-B base permanent magnet material. (*See, Yamamoto; Para. [0002]*). According to Yamamoto, the R-Fe-B base permanent magnet material include a rare earth-iron-boron magnetic alloy which contains a $Fe_{14}R_2B_1$ primary phase on a volumetric proportion of 87.5 to 97.5%, and a rare earth oxide or a rare earth and transition metal oxide in a volumetric proportion of 0.1 to 3%. (*See, Yamamoto; Para. [0010]*).

The Takebuchi Reference

Takebuchi is directed to a method for preparing rare earth permanent magnets (*Takebuchi; col. 1, lines 6-7*). According to Takebuchi, a method for preparing a permanent magnet containing R, T and B as main ingredients is provided. The permanent magnet has a primary phase consisting essentially of $R_2T_{14}B$. R is at least one element selected from yttrium and rare earth elements; T is iron or a mixture of iron and cobalt; and B is boron. The method involves the steps of compacting a mixture of 60 to 95% by weight of a primary phase-forming master alloy and 40 to 5% by weight of a grain boundary phase-forming master alloy both in powder form and sintering the compact (*Takebuchi; col. 3, lines 8-17*).

The Claims are Patentable Over the Cited References

The present application is generally directed to a method for manufacturing an R-T-B system rare earth permanent magnet having R, T, and B.

As defined by amended independent Claim 1, a method for manufacturing an R-T-B system rare earth permanent magnet including a sintered body having a composition consisting essentially of 25% to 35% by weight of R (wherein R represents one or more rare earth elements (providing that the rare earth elements include Y), 0.5% to 4.5% by weight of B, 0.02% to 0.6% by weight of Al and/or Cu, 0.03% to 0.25% by weight of Zr, 4% or less by weight (excluding 0) of Co, and the balance substantially being Fe, is provided. The sintered body includes a main phase consisting of an $R_2T_{14}B$ phase, and T represents one or more transition metal elements essentially containing Fe, or Fe and Co. A grain boundary phase contains a higher amount of R than the main phase. A product that is rich in Zr exists in the $R_2T_{14}B$ phase.

The manufacturing method includes the steps of preparing an R-T-B alloy containing, as a main component, the $R_2T_{14}B$ phase and also containing the whole amount of Zr, and an R-T alloy containing R and T as main components. The amount of R is higher than that of the R-T-B alloy. A mixture of a powder of the R-T-B alloy and a powder of the R-T alloy is obtained. A compacted body with a certain form from the mixture is prepared. The compacted body is sintered.

In the sintering step, the product is generated in the $R_2T_{14}B$ phase. The R-T-B alloy is prepared by the strip casting method under the condition that the peripheral velocity of a chill roll is 1.0 to 1.8 m/s.

With regard to the 103(a) rejection over Yamamoto, Yamamoto does not disclose or suggest, inter alia, "in said sintering step, said product is generated in said $R_2T_{14}B$ phase," and, "wherein said R-T-B alloy is prepared by the strip casting

method under the condition that the peripheral velocity of a chill roll is 1.0 to 1.8 m/s," as recited in amended independent Claim 1.

Yamamoto is silent regarding the chill roll speed and the product rich in Zr is generated in the $R_2T_{14}B$ phase as recited in the amended independent Claim 1. Accordingly, the product rich in Zr is not generated in the $R_2T_{14}B$ phase in the Yamamoto's sintering step.

The Office Action at page 4, line 14 asserts, "one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the determination of the appropriate chill roll speed to use to strip cast the mother alloy for the purpose of the Yamamoto's invention is considered to be within the skill of one ordinary skill in the art."

However, the Zr-B compound of Yamamoto exists in the grain boundary phase (*Yamamoto; pages 2-3, para. [0037], [0038], and [0040]*). In contrast, amended independent Claim 1 recites that Zr exists in the $R_2T_{14}B$ phase. Accordingly, Yamamoto does not disclose or suggest the features of that claim.

There is no need to set the chill roll speed as recited in amended independent Claim 1 in order to achieve the purpose of the Yamamoto's invention. Yamamoto's teaching thus fails to render obvious the chill roll speed recited in amended independent Claim 1.

Moreover, the compositions in the Yamamoto's Examples 3-1, 3-2 and 3-4 are out of the range recited in amended independent Claim 1, and Example 3-3 does not use an R-T-B alloy containing the whole amount of Zr. Accordingly, Yamamoto does not render obvious the features recited in amended independent Claim 1.

With regard to the 103(a) rejection over Takebuchi, Takebuchi does not disclose or suggest the composition and Zr rich product recited in amended independent Claim 1.

Takebuchi discloses that "A particular composition of the master alloy may be suitably determined in accordance with the target magnet composition while considering the composition of the grain boundary phase-forming master alloy and its mixing proportion. Preferably the primary phase-forming master alloy consists essentially of 27 to 38% by weight of R, 0.9 to 2% by weight of B, and the balance of T. Additionally, an element selected from Al, Cr, Mn, Mg, Si, Cu, C, Nb, W, V, Zr, Ti, and Mo may be added. A residual magnetic flux density will lower if the amount of such an additive element exceed 6% by weight." (*See, Takebuchi; col. 15, lines 13-25*). However, Takebuchi is silent regarding the composition and Zr rich product, and provides no specific example including Zr. The roll peripheral speed of the master alloy No. 1-2 is 1 m/s as shown in the Table 1 of Takebuchi. However, the master alloy No. 1-2 does not contain Zr.

Amended independent Claim 1 recites the chill roll speed, preparing the R-T-B alloy containing Zr, and generating the Zr rich product in the $R_2T_{14}B$ phase in the sintering step.

In contrast, Takebuchi controlled the roll speed in order to change the thickness and columnar grain mean size of the primary phase-forming master alloy as shown in the Table 1, and thus prepared the above mentioned alloy No. 1-2, which contains no Zr. Accordingly, Takebuchi does not render obvious the features recited in amended independent Claim 1.

Since the applied references do not disclose or render obvious the features of the present invention as recited by amended independent Claim 1, independent Claim 1, as amended, is believed to be in condition for allowance and such allowance is respectfully requested.

The remaining claims 2, 3, and 6 depend directly from independent Claim 1, and recite additional features of the invention which are neither disclosed nor fairly

suggested by the applied references and are therefore also believed to be in condition for allowance, and such allowance is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4721 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
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